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EXAMINER	
LIGHTFOOT, ELENA TSOY	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action

The amendment filed on August 17, 2009 under 37 CFR 1.116 in reply to the final rejection has been entered and considered but is not deemed to place the application in condition for allowance for the reasons of record set forth in the Final Office Action mailed on 5/15/2009.

Claim Rejections - 35 USC § 112

Rejection of claims 3, 5, 7, and 9-41 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to amendment.

Response to Arguments

Applicant's arguments filed August 17, 2009 have been fully considered but they are not persuasive.

(A) Applicants traverse the rejections over cited prior art because claimed features These features are not shown or suggested by Kawakami et al., Kaneyoshi, Svendsen et al., Weber et al. and Segawa et al. or any combination of these references. Kawakami et al. do not disclose the steps of (II) adding a slurry, which includes the core particles prepared by the step of (I), to an initial thin film-forming solution containing nickel ions, a reducing agent, and a complexing agent comprising an amine to prepare an aqueous suspension, dispersing the core particles in the initial thin film-forming solution, and reducing the nickel ions to form initial thin nickel film on a surface of each of the core particles.

The Examiner respectfully disagrees with this argument. As was discussed in the previous Office Actions, Kawakami et al teaches that an aqueous suspension (**slurry)** of noble metal catalyst plated core particles is prepared *before* carrying out electroless plating treatment (See page 16) either in water alone (See page 17, paragraph 2, lines 1-2) or in an aqueous solution of a complexing agent (See page 17, paragraph 2, lines 3-6). A (nickel) plating solution which is prepared in advance (See page 18, last line) is gradually added to the aqueous suspension (**slurry)** of catalyst plated core particles (See page 19, lies 1-2) or adding ***at least two*** solutions constituting electroless plating solution individually and simultaneously to an aqueous suspension of core particles formed with one of components constituting an electroless plating

solution in particular with a solution of a complexing agent (See Translation, page 17, paragraph 2, lines 6) such as **ethylenediamine** solution (See Translation, page 18, lines 6-7; page 25, Table 5) to allow plating reaction to take place (See Translation, page 19, paragraph 1).

In other words, Kawakami et al teaches adding a nickel plating solution to the slurry of core particles that differs from the claimed order of adding the slurry of core particles to the nickel plating solution, as recited in claimed step (II). However, it is well settled that selection of any order of mixing ingredients is prima facie obvious. In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added slurry of catalyst plated core particles to a nickel plating solution in Kawakami et al instead of adding a nickel plating solution to the slurry of catalyst plated core particles in the absence of showing of criticality.

Since Applicants did not show *criticality* of claimed order of adding components, Applicants did not rebut the obviousness over Kawakami et al.

(B) Applicants note that in the office action, the Examiner disagreed with the applicants' arguments that Kawakami et al. do not need to reapply the additional plating solution after completing the plating film on the core particles. The Examiner believed that Kawakami et al. taught that a plating solution having a saturation concentration of each agent can be used. The Examiner also believed that since the saturation concentration was limited, the desired thickness might not be obtained in a single plating operation if the desired thickness was thicker than the thickness that can be obtained in a single plating operation (see page 5, line 13 - page 6, line 2 of the office action). Applicants respectfully traverse the above Examiner's assumptions for the reasons discussed below. Applicants respectfully submit that event though the concentration of each agent can be set within the saturation concentration, the amount of each agent is not limited based on adjusting the entire amount of the plating solution. In other words, if the entire amount of the plating solution is increased, the saturation concentration does not affect the amount of each agent. The Examiner believed that the desired thickness might not be obtained in a single plating operation if the desired thickness was thicker than the thickness that can be obtained in a single plating operation. However, applicants respectfully submit that it is completely reasonable to assume that Kawakami et al. would increase the entire amount of the plating solution to obtain the desired thickness in a single plating operation since Kawakami et al. wants to do the plating operation in a single plating operation. Kawakami et al. disclose that the thickness of the plating film can be controlled arbitrarily depending on the amount of addition (see page 21, lines 11-13 of the translation). Thus, even though there is the saturation concentration of each agent, the amount of addition (metal salt) is easily increased by adjusting the entire amount of the plating solution. In addition, in the method of Kawakami et al., there is no reason to reapply the additional plating solution after completing the plating films on the core particles because the method of Kawakami et al. adds the plating solution in the aqueous suspension only one time and controls the thickness of the plating film based on adjusting the amount of addition.

Applicants respectfully submit that Kawakami et al. would not want to reapply the plating solution after completing the plating films on the core particles because it requires the extra steps and takes more time and efforts.

The Examiner respectfully disagrees with this argument. First of all, Kawakami et al teaches *nowhere* that a single plating operation can achieve **any** desired thickness. Kawakami et al teaches that a plating solution having a *saturation* concentration of each agent can be used (See page 20, lines 1-2) to obtain thickness of 50 Angstrom **or more** (See page 9, paragraph 2) without indicating **more** possible thicknesses. Furthermore, since saturation concentration is limited, the desired thickness might not be obtained in a single plating operation if the desired thickness is thicker than the thickness that can be obtained in a single plating operation.

It is well known in the art that the **desired thickness** of a plated metal layer can be reached by ***re-applying*** electroless plating to a substrate surface (***not* by increasing a concentration of components**), as evidenced by US 5,262,718 to **Svendsen et al** (See column 5, lines 55-57).

As to columnar structures, Applicants specification shows that nickel plating in the presence of a complexing agent results in nickel plating having columnar structure (See P33 of Published Application). Therefore, the plated nickel film of the cited prior art would also have columnar structures extending in a direction of thickness of a nickel film since it is formed by a process that would be substantially identical to that of claimed invention.

(C) Applicants note that Svendsen et al. do not make up for the deficiencies in Kawakami et al. and Kaneyoshi. Svendsen et al. relate to anisotropically electrically conductive articles and methods of making them (see col. 1, lines 11,12). Svendsen et al. disclose that the thickness of the metal layer inside the pores is enhanced by re-applying electroless plating to the membrane until the desired thickness has been reached; at the same time protrusions of approximately the same height as the thickness of the metal wall inside the pores are formed at the pore surfaces (see col. 5, lines 55-60). Svendsen et al. do not disclose the claimed steps of (II) and (III).

The argument is unconvincing because Svendsen et al is a secondary reference which is relied upon to show that in the electroless metal plating art the desired thickness of electroless nickel plating film is achieved by **re-applying** the electroless nickel plating film not by increasing concentration of the metal ions. Thus, it is irrelevant whether Svendsen et al. disclose the claimed steps of (II) and (III) or not.

(D) Applicants note that all other secondary references do not disclose the claimed steps of (II) and (III).

The argument is unconvincing because the Examiner stated that claimed steps of (II) and (III) would be obvious over Kawakami et al such that the secondary references were cited to show missing elements of dependent claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy Lightfoot whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1792

August 24, 2009

/Elena Tsoy Lightfoot/